

What is claimed is:

1. A method for diagnosing and distinguishing stroke comprising
  - a. analyzing the body fluid of a patient to detect the presence and concentration of four markers of stroke wherein
    - i. A first marker is myelin basic protein,
    - ii. a second marker is the beta isoform of S100 protein,
    - iii. a third marker is neuronal specific enolase,
    - iv. a fourth marker is a brain endothelial cell membrane protein
  - b. from the information obtained from said analyses verifying whether an ischemic or hemorrhagic cerebral event has occurred and differentiating a particular type of cerebral event.
2. A method as defined in claim 1 wherein said body fluid is selected from the group consisting of blood, blood products and cerebrospinal fluid.
3. A method as defined in claim 1 wherein each of said analyses is carried out on the same sample of body fluid.
4. A method as defined in claim 1 wherein at least one of said analyses is carried out on a first sample of body fluid and at least another of said analyses is carried out on a second sample of body fluid.
5. A method as defined in claim 4 wherein said first and said second samples of body fluid are taken at different time periods.
6. A method as defined in claim 1 wherein said brain endothelial cell membrane protein is selected from the group consisting of Thrombomodulin, Glucose Transporter 1 in the dimeric or tetrameric form, Neurothelin/HT7, Gamma Glutamyl Transpeptidase, P-glycoprotein and combinations thereof.

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7. A method as defined in claim 1 wherein at least one of said analyses comprises contacting said body fluid with an antibody which is specific for said marker.

8. A method as defined in claim 7 wherein at least one of said analyses is carried out with an enzyme-labeled immunoassay method.

9. A method as defined in claim 1 and further including the step of analyzing said body fluid for a fifth marker protein, wherein said fifth marker protein has the same specific cell type as one of said first, second or third markers and has a higher molecular weight than said first, second or third marker which has the same specific cell type.

10. A method as defined in claim 9 wherein at least one of said analyses comprises contacting said body fluid with an antibody which is specific for said marker.

11. A method as defined in claim 10 wherein at least one of said analyses is carried out with an enzyme-labeled immunoassay method.

12. A method as defined in claim 1 and further including the step of analyzing a second sample of a body fluid from said patient for said four markers, said second sample of body fluid being taken at a time subsequent to said body fluid analyzed in step a.

13. A method as defined in claim 1 wherein said steps of verifying and differentiating include comparing the concentration level detected in said analysis for each said four markers to a predefined threshold level for each said marker.

14. A diagnostic kit for diagnosing and distinguishing stroke comprising at least four antibodies which are specific for each of four different marker proteins, said antibodies immobilized on a solid support, wherein

a. a first marker protein is myelin basic protein and a first antibody is specific therefor,

b. a second marker protein is the beta isoform of S100 protein and a second antibody is specific therefor,

c. a third marker protein is neuronal specific enolase and a third antibody is specific therefor, and

10 d. a fourth marker protein is a brain endothelial cell membrane protein and a fourth antibody is specific therefor and at least four labeled antibodies, each of said labeled antibodies binding to one of said marker proteins.

15. A diagnostic kit as defined in claim 14 wherein each of said four antibodies is immobilized on the same solid support.

16. A diagnostic kit as defined in claim 14 wherein at least one of said four antibodies is immobilized on a first solid support and at least another of said four antibodies is immobilized on a second solid support.

17. A diagnostic kit as defined in claim 14 wherein at least one of said labeled antibodies comprises an enzyme-labeled antibody.

18. A diagnostic kit as defined in claim 14 wherein said brain endothelial cell marker protein is selected from the group consisting of Thrombomodulin, Glucose Transporter 1 in the dimeric or tetrameric form, Neurothelin/HT7, Gamma Glutamyl Transpeptidase, P-glycoprotein and combinations thereof.

19. A diagnostic kit as defined in claim 14 and further including a fifth antibody which is specific for a fifth marker protein, wherein said fifth marker protein has the same specific cell type as one of said first, second or third markers and has a higher molecular weight than said first, second or third marker which has the same  
5 specific cell type, and a fifth labeled antibody which binds to said fifth marker protein.

20. A diagnostic kit as defined in claim 19 wherein said fifth labeled antibody comprises an enzyme-labeled antibody.

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21. A method for the differential diagnosis of ischemic and hemorrhagic cerebral events comprising

a. analyzing the body fluid of a patient to detect the presence and concentration level of one or more ischemic marker proteins selected from the group consisting of myelin basic protein, the beta isoform of S100 protein, neuronal specific enolase and combinations thereof,

b. analyzing the body fluid of said patient to detect the presence and concentration level of a brain endothelial cell membrane protein, and

10 c. from the information obtained from said analyses, verifying the occurrence of an ischemic or hemorrhagic cerebral event and differentiating a particular type of cerebral event.

22. A method as defined in claim 21 wherein said steps of verifying and differentiating include comparing the concentration levels detected in said analyses for said one or more ischemic marker proteins and for said brain endothelial cell membrane protein to a predefined threshold level for each said ischemic marker protein and for said brain endothelial cell membrane protein.

23. A method as defined in claim 21 wherein said body fluid is selected from the group consisting of blood, blood products and cerebrospinal fluid.

24. A method as defined in claim 21 wherein said brain endothelial cell membrane protein is selected from the group consisting of Thrombomodulin, Glucose Transporter 1 in the dimeric or tetrameric form, Neurothelin/HT7, Gamma Glutamyl Transpeptidase, P-glycoprotein and combinations thereof.

25. A method as defined in claim 24 wherein said brain endothelial cell membrane protein is Thrombomodulin.

26. A method as defined in claim 21 further including  
analyzing said body fluid to detect the presence and concentration level of a secondary marker protein having the same specific cell type as one of said myelin

5 basic protein, beta isoform of S100 protein or neuronal specific enolase whereby the time of onset of a hemorrhagic or ischemic cerebral event can be determined.

27. A method as defined in claim 26 wherein said secondary marker protein has a higher molecular weight than said myelin basic protein, beta isoform of S100 protein or neuronal which has the same specific cell type.

28. A method as defined in claim 21 wherein each of said analyses is carried on the same sample of body fluid.

29. A method as defined in claim 21 wherein at least one of said analyses is carried out on a first sample of body fluid and at least another of said analyses is carried out on a second sample of body fluid.

30. A method as defined in claim 29 wherein said first and said second samples of body fluid are taken at different time periods.

31. A method as defined in claim 21 wherein  
a plurality of samples of said body fluid are obtained at predefined time intervals and analyzed and the information from said analyses compared as a function of time whereby the progression of an ischemic or hemorrhagic cerebral event can be determined.

32. A method as defined in claim 21 wherein each of said analyses comprises contacting said body fluid with an antibody which is specific for said protein.

33. A method as defined in claim 32 wherein at least one of said analyses is carried out with an enzyme-labeled immunoassay method.

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